AMERICAN BEE JOURNAL.

EDITED AND PUBLISHED BY SAMUEL WAGNER, WASHINGTON, D. C.

VOL. III. MAY, 1868. No. 11.

[Translated from the Bienenzeitung.]

Practical Bee-culture.

I propose submitting some remarks on practical bee-culture; though what I have to say may not be new to all, I think it will be serviceable to some and interesting to many.

1. Can *Melilotus alba*, or melilot clover, be recommended as a good honey-plant? The cultivation of this plant as a forage crop for cattle, and for bee pasturage, has been frequently suggested. Attempts have been repeatedly made to introduce it in various sections of the country, and it has thus been tested in different kinds of soil and diversities of exposure and climate. Some writers have been lavish in its praise, and others have unspairingly condemned it. I tried it myself about twenty-two years ago, and spoke of it as follows, in the *Bienenzeitung* for 1845:—"Attracted by the favorable notices I had seen of this plant or melilot clover, I purchased a small quantity of seed, that I might test the alleged good qualities of this wonderful plant. The stalks produced grew to an extraordinary height, and yielded seed so profusely that could I have sold it at the price I paid, I should speedily have become rich indeed. The little white blossoms were continually covered with bees, and night alone compelled them to withdraw. But as for fodder, whether in a green state or dry, the plant was entirely worthless; and I have since been endeavoring to extirpate it again, though thus far with only partial success, because of its deeply penetrating roots."

I remain of the same opinion still, namely:—that this species of clover cannot be recommended as a forage plant. If grown for soiling, it must be mown long before it comes into blossom, and even then nine cows out of ten will reject it, because of its disagreeable odor. If permitted to bloom, the bees will for some time have an ample supply of pasturage, but cattle will afterwards refuse to eat the hard and ligneous stems. There will be plenty of seed, indeed, and could it be sold at one dollar per pound, as the seedsmen charge for it, it would be a most profitable crop. But, alas, the demand for it is small, and must so continue, unless some one is fortunate enough to discover that it possesses some yet unknown value for economic uses. Moreover this plant soon becomes a perfect pest on a farm, as a weed in the soil which can hardly ever be extirpated. I sowed the seed of it in 1845, in my garden, and though I have been rooting out the stalks ever since, whenever and wherever they make their appearance, and never permit any to ripen its seeds, it is still annually coming up. On road sides, on stony spots, or on poor sandy tracts not fit for tillage, this clover might answer, as it might there be allowed to bloom for the benefit of the bees. It will however not grow so tall, nor blossom so profusely there, as on richer land.

2. A much more valuable bee-plant than this, is the *Trifolium incarnatum*, or Incarnat clover, mentioned by me on a former occasion. As there stated, I had sown some seed of it on one of my poorest unmanured fields, the soil of which was highly charged with the oxide of iron. It stood the winter well, and grew splendidly in the spring. The stalks, when in full bloom attained a height of four feet, and presented a perfect sea of blossoms, on which the bees revelled in great glee. Unfortunately I was constrained to remove a large portion of it for soiling my cattle. The earliest mown, however, soon produced a second crop of blossoms and a considerable amount of aftermath.

As forage for cattle, I value this species of clover highly. The hay is greedily eaten by cows, hogs, and sheep.. In northern climates the plant is an annual; but, in southern, it may be regarded and treated as a biennial.

3. *Queenless Swarms.*—It has probably occurred in the experience of most bee-keepers, when bees have swarmed, that the queen was not among them. She either did not accompany them when they issued, or was lost in some way during the act of swarming. It happened last spring that the queen of one of my swarms was stung as she came forth—whether by one of her own bees, or by a stranger, I know not. I took the dying queen from the alighting board, inclosed her in a queen cage, fastened that in a hive which I held up among the swarming bees. They promptly entered and

surrounded her majesty; and I subsequently gave them a young fertile queen.

Usually, swarms that are queenless, or are unattended by a queen, are permitted to return to the parent stock, in the expectation that they will re-appear better provided, in a day or two. But it is by no means certain that they will do so. Sometimes a sudden change of weather occurs, bees lose the swarming impulse, and the hoped-for increase is expected in vain. If it can possibly be prevented, I never permit a prime swarm to return under such cimcumstances. As soon as I perceive from the indications in the hiving-basket, that the swarm is queenless—the bees not clustering properly, and some continually leaving for home—I place the basket on a frame covered with wire guaze, and close all the openings to prevent the escape of the bees. They soon become tumultuous and clamorous, whereupon I procure a fertile queen from one of my nuclei colonies, cage her, and insert her in the hive. In an instant all is quiet, the bees soon become attached to their new ruler, and in the evening I liberate her, and set them on their stand. Or if I have any weak colonies at the time, I strengthen them by means of these bees, which will remain in any locality wherever placed, and may if desirable be divided among several colonies.

4. *Uniting and Strengthening.*—It is often necessary to resort to each of those processes, and yet they are apt to be failures. A colony may be strengthened without endangering the life of the queen, if bees be brought from a distance and kept confined, queenless, in a well ventilated transporting hive, and then run into a weak colony in the evening. I have never lost a queen when thus introducing bees. In fact bees of different colonies standing near each other, will intermix in the evening without quarreling, and without manifesting hostility to to the queens. In like manner bees which, in the course of the day, mistake their hive and lighting at the entrance as strangers, beg their way in by fanning, rarely meet with a hostile reception. In view of this fact, when I wish to introduce bees to strengthen a weak colony, I place an inclined board in front of the hive, shake the bees on it, brush a few workers to the entrance, and the whole number speedily move forward humming and fanning, being peaceably received in their new quarters. The hive to be strengthened may also be removed from its stand and set on a table, and the bees to be added, shaken down in front of the entrance.

If the bees to be added have a queen, there may be trouble and loss. The bee books tell us "invert the hive containing the swarm, and set on it the one which is to be strengthened, and the queen will be dispatched as she ascends." Very plain, and very fine; pity it should so frequently fail. I once strengthened in this manner a weak colony containing a beautiful Italian queen, by introducing an afterswarm which I supposed to be queenless. On the following day I made an examination, and believed all was right; but on the third morning I found the Italian queen dead at the entrance. I re-examined the hive, and found a young black queen moving about very sedately on one of the combs. She had obviously killed her yellow rival.

In order to pack a large number of bees in a box for transportation to my apiary, I shake them from the swarming-basket, from combs, honey-boards, &c., into a vessel of water, and then transfer them by means of a strainer to a large sized cigar box provided with a wire gauze bottom. Set in the sun for a time, the bees become dry and active; and the box will contain safely a considerably larger number than could otherwise be confined therein. They must of course be supplied with food, if their confinement is protracted. Outlying bees may be brushed from the front of their hives into water, for the same purpose; but being treated on an empty stomach, bees are apt to be pugnacious, if a clean sweep is not skilfully made.

5. *Transferring combs, and encasing queens.*—Several years ago I lost a queen in consequence of transferring combs in the brooding apartment of a hive. She was killed by her own bees. A similar occurrence would probably have taken place in my apiary this year, had I not been present. I had a small colony in a square box hive, and wished to transfer it to another hive, in order to strengthen it with bees from other stocks. The queen, bred in one of my reserve nuclei, had been fertilized two days before, but had not yet begun to lay. I transferred the combs to the new hive, and found the queen among a crowd of bees in their old home; whence I transferred her also to her new quarters. I closed the hive, and soon after the bees of all my stocks began to fly or disport briskly. Those of the new hive did so likewise, but the excitement continued long after the others had become settled. Suspecting something wrong, I immediately made an examination, and found the queen encased by a cluster of workers. I lifted out the cluster to liberate the queen; and just as I was about to seize her, she took wing and escaped. Of course I thought she was lost, for being a stranger bred in a distant hive, she would certainly be killed outright if she attempted to enter any one of the forty stocks then in my apiary. I kept a good lookout nevertheless, and finally saw her near her own hive, having been seized by several of the workers who were endeavoring to kill her. Rescuing her from the imminent danger, I caged and replaced her among her still excited subjects. Next day, finding peace and quiet restored, I liberated her, and she at once mingled with the crowd without molestation.

When an unusual degree of excitement is observed among the bees of any colony, at their first flight in the spring, or when a young queen makes her wedding excursion, or after they have been disturbed by any operation, a thorough examination should be immediately made. In most cases the queen will be found encased by a cluster of workers, and unless quickly rescued, she is sure to be killed.

6. *Use of old Combs.*—It is well known that old brood combs are warmer than new ones, and better suited for wintering. Hence the advantage of using such as are still in good con-

dition, to furnish hives for the reception of swarms and artificial colonies. So long as a comb held up to light is still at least semi-transparent, it will be serviceable in a hive. Such as are black or opaque when thus held up, should not be inserted in the brood chamber—though one placed at the end of a range, as a cover to the rest, when the hive is only partially filled, will prove advantageous, if properly used. Then when the anterior combs are supplied with eggs and brood, this comb should be drawn back sufficiently to permit an empty frame to be inserted. The bees, who would hesitate long to pass beyond the old comb for building, will speedily fill the inserted frame; and the manœuvre may then be repeated again and again, till all the space is occupied; after which the old comb should be removed.

7. *Safe introduction of Queens.*—Most bee-books contain instructions for the safe introduction of Italian queens. Nevertheless many bee-keepers, beginners especially, complain of ill luck in the attempt. The surest mode is found to be, not to introduce the queen to the bees, but, on the contrary, the bees to the queen. If the bees remain in their accustomed home, they feel like lords and masters there; and, though queenless, they will very reluctantly accept an offered queen—much prefering to rear one of their own brood. The case is otherwise, when they are allowed to build queen cells, and all these are destroyed on the ninth or tenth day, when all the brood has been capped, and an Italian queen is then introduced. But in many cases, the introduction cannot conveniently be so long deferred, and I then use two wire gauze caps—a larger and a smaller—for the protection of the queen. If possible I select a brood comb, containing a few open cells with honey. On this I place the queen, covering her with the smaller cap. Over this I set the larger, broader cap, pressing it down to the septum or midde partition of the comb. The queen is thus secure from all hostile attacks by the workers, against which a single cap does not always afford protection. In the course of forty-eight hours the animosity of the bees usually subsides, and I remove the upper or larger cap. The other also may usually be removed on the following day.

When an artificial colony is formed, by transferring workers from their native hives, or by taking bees from three or four stocks, and locating them in a new hive, such precautions are not required, when introducing a queen. Bees thus removed to new quarters, or brought together from various homes, are confused and intimidated, and ready to accept a fertile queen when offered. Still the safer plan is always to cage her for a time, and watch the behaviour of of the bees.

O. ROTHE.

ALTSCHAU.

☞Old queens, or such as are becoming superannuated, not unfrequently lay a few drone eggs in worker cells, so that drones are occasionally found maturing amid worker brood. When this occurs a young fertile queen should be substituted for the old one.

[For the American Bee Journal.]

Hives and Management.

As I promised to give a description of the workings of the hive I use, for the readers of the JOURNAL, I shall commence by saying that it may not be by any means the best hive in use, but as I have tried almost all forms, and this proves the most satisfactory, I shall give it for what it is worth.

As I said in a previous article, if I was going to winter bees out of doors, I should make the hive deeper, but retain the same form. The frames, if proper care is taken in making them, will hang true on the rabbetings, even though twenty inches deep. But if nailed up in the common hap-hazard way in the rough, they will have to be fastened permanently at equal distances—which I have tried and rejected long ago. The shape of the hive I have given in a previous number of the JOURNAL; but I have a contrivance on the bottom which I have not described before. Say the hive is twelve inches deep, dress out your stuff twelve inches wide, lacking three-eighths of an inch; rabbet out on the outside at the bottom of the hive and nail on a piece of hoop-iron in the rabbeting, so that it will project three-eighths of an inch below the hive all around. Now, when the hive is set on the board, it rests on the knife-like edge of the hoop-iron, and there is no possible chance for a moth to hide; there is no accumulation of droppings under the edge of the hive for the miller to deposit her eggs in; and with my management, I have not seen a moth in that kind of hive in three years. I have some champered to an edge at the bottom, and some with boards without champering. In these hives I occasionally find a moth. If, as Mr. Quinby suggests, the miller deposits her eggs under the edge of the hive, and the bees carry them up on their feet, this hoop-iron arrangement may be a good thing. I am not yet prepared to say that a hive thus prepared is actually moth proof; but it is certainly better than a channel to raise moths in for the purpose of having the trouble of killing them.

The entrance is a channel cut in the bottom-board. Now, should you think an inclined bottom-board is a good thing, raise the bottom-board on the rear side until you are satisfied with it; but I will assure you that it is no benefit whatever.

If you want your young queens to mate with drones of any particular hive, move all the rest of your hives back on their bottom-boards from the channel, and close the hole above with wire screening. Now raise the front side of the hive on a *hard wood* wedge, just sufficient to allow the workers to pass out and in freely, and so that a drone cannot pass. Then your workers have the whole length and breadth of the hive, which is eighteen inches. Consequently it is much better than a patent thumb-screw to regulate the entrance. Move the hive forward on the bottom-board, and you enlarge the entrance; move it back, and the entrance is contracted, to prevent the bees from clustering out. In hot weather, move the hive forward over the front

edge of the bottom-board, from half an inch to one inch, according to the size of the swarm; then every comb is ventilated. Some will tell you to fix a convenient place for the bees to cluster on outside; but I tell you to keep your bees at work inside of the hive. You will find that much more profitable. I never allow them to cluster out. Upward ventilation is wrong in the breeding season; and so is any contrivance for the bees to pass directly into the surplus honey-boxes from the outside of the hive, for the bees that gather the nectar from flowers are not those that store it in the surplus boxes. With the Italians any one can satisfy himself on that head; at least I am satisfied now.

For the upper part of the hive, when the time comes to put on your boxes, remove the honey-board and substitute small strips or blocks, one-quarter of an inch thick; lay them directly on the frames, and put on your boxes with the fourth of an inch space between the top of the frame and the bottom of the box, which allows the bees to pass over the top of the frame. Make your boxes, either large or small, to suit your own fancy. Should you use one box the size of the chamber, leave a two inch hole the whole length of the box. Should you use three boxes, they would be about eleven and a half by five and a half inches. Have two entrances in each box, one inch by five. Should you use six boxes, have the entrance one inch by five, and place them so that the entrance goes across the frames, instead of lengthwise, in every case.

Many persons complain that the bees do not work in boxes. I have frequently seen such boxes. For example, a friend uses the old fashioned chamber hive. He says I now let my bees fill the chamber, without boxes, and cut out the honey after cold weather, when the bees are below; for they always fill the chamber, but will not work in boxes at all. "Well, friend, they cannot work in your boxes." (He used boxes with an inch hole in each, to correspond with an inch hole in the chamber board). "You are a mechanic. Now, how are the bees going to work to cause a cool stream of air to pass into that inch hole, and a stream of heated air to pass out at the same time? With your boxes out, and your four holes open to the chamber, it is quite different." Still the said friend's hive was a patented one.

When bees are gathering honey, I take off a full box at night, and the empty one substituted will be filled with bees in the morning, at work building comb, &c. Again, with a division board, I can manage a small swarm just to suit me in every respect, or a large one either. To illustrate this: sometime in August, 1866, a neighbor found a swarm clustered in a bass wood tree about twenty feet high. He sent word for me to come and hive it for him. I was from home at the time, and did not get back till after dark. Having to go away again before light next moning, I went and hived the swarm for him that evening; and there chanced to be less than a pint of bees left on the tree. Three days after I took a piece of comb, with eggs and larvæ in it, tied it to the end of a pole, held it up to the bees, and they clustered on it forthwith. I put them in a small box and carried them home; took from a hive a frame filled about one-half with brood nearly mature, and the remainder eggs and larvæ just hatched; this I inserted in an empty hive, introduced a young fertile hybrid queen, and gave her the said lot of less than pint of workers. Adjusting the division board, I let them go to work without any feeding. They filled seven (7) frames that fall, and stored sufficient honey to winter on. Last spring I took out two empty combs and inserted two well filled with honey from another swarm; fed them about two pounds of sugar the last of June and up to the 20th of July. They then had five frames to fill with comb. The first week in August I took out one frame filled with brood and started a new swarm, and gave them access to the honey boxes to keep the queen busy below; and to prevent swarming. I took out frames filled with brood, one at a time, as they could spare them, to build up the young swarm. Taking out one of those frames did not appear to diminish their labors in the boxes in the least. Recollect that the frames are only about ten inches by eleven, inside measure. To sum up: after the 20th of July, 1867, they filled the balance of the hive, which was five frames; and I took away six frames filled with brood, one at a time, building up a first-rate swarm. I also took away one hundred pounds of surplus honey, two thirty-five pound boxes, and two fifteen pound boxes. When the bees were numerous enough to store twenty pounds of honey per week, and the thermometer was up to 100° in the shade, they did not cluster out the least. I am aware that the form of hive is not everything; but knowing exactly how and when to make the right moves, *and doing it*, has considerable influence on the result.

We will say that I have the Lee, Kidder, Champion, or Thomas form of hive, or even the shallow form of the Langstroth; then taking out one frame takes out too large a proportion of the working force, at once, from the main hive. I never could manage those hives so as to have all the comb worker-comb, and all occupied with brood throughout the entire comb surface in the breeding season. You must recollect that last season was the worst honey season that I remember, up to the 20th of July; and from that time up to the 8th of October, it was (for swarms that had been properly taken care of) as good as any I ever knew. We had none of the drought which was experienced in other sections.

Cheapness and simplicity in a hive is what I have been studying at for years, and it is preposterous to suppose that bees will make more surplus honey in your nail-keg than mine. But we ought not to have over three forms of hive, to suit every person's whim. Almost all the little fixings about a hive that are patented, are a perfect nuisance to the practical apiarian.

There is something yet that I have to speak of in this article. I formerly used box-hives twelve inches square and fourteen inches high, and used them for ten years without any sticks in the centre. The centre bar in the Champion or the American hive occupies space that ought

to be occupied with brood. Say the bar is ten inches long in each frame, then it occupies ten square inches, or thereabout. Each square inch will contain fifty worker cells, and ten times fifty is five hundred. Thus your bees are brooding a stick instead of five hundred workers every three weeks during the season.

This article was suggested by my receiving so many inquiries from individuals relative to my opinion about different kinds of hives, &c., and whose hive I would recommend. I have endeavored to answer them without fear or favor. There are so many worthless hives, and so many worthless fixings about different kinds of hives, that it is not to be wondered at that the novice is puzzled to know what kind to choose.

A letter of iuquiry enclosing a stamp will be answered on any occasion; but in future, by the editor's permission, some of the questions shall be answered through the BEE JOURNAL.

ELISHA GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.]

Depth of Hives.

Mr. Langstroth in the February number of the JOURNAL, recommends the trial of deep hives, *as to their relative value for wintering in the open air*. I will give you a little of my experience. I have used hives sixteen inches, iourteen inches, and am now using them twelve inches deep. I have also had the care of them for my neighbors, of the dimensions Mr. Langstroth uses; but you must recollect that I have always lived in a colder climate than Mr. Langstroth does. The dimensions of the hive I now use, are twelve inches from front to rear, twelve inches deep, and eighteen inches long, inside measure. I have wintered in this hive in the open air with perfect success. But I never could winter in the open air, in any kind of hive, without the bees consuming too much honey to suit me. If I was going to winter in the open air, I would make a hive just high enough to admit a frame twelve inches high inside, and enough narrower to receive one or two frames less, because that is high enough to contain, above and in the cluster of bees, all the honey they will consume during the coldest weather. In the broad shallow hives the bees cannot cluster naturally; for a good strong colony in the fall, if allowed to cluster naturally, will occupy a space (together with the comb and honey), in a circular form, twelve inches in diameter. And when bees are constrained to cluster in a non-natural manner, they cannot economize the animal heat, either in winter or summer. Consequently the queen cannot breed up to her full capacity so early in the season; neither will she breed so well throughout the season in the broad shallow form. If the hive is too high, the bees eat the honey directly above them, and in the spring they commence breeding where they are clustered. It then takes them till late in the season before they occupy the combs at the bottom of the hive, which gives the moth a chance to get in. Another thing; if your combs are too deep, you cannot use a division board to so good advantage as you could if the comb was not so deep. To illustrate, say that for making small swarms or for raising queens, you take a frame from the American hive, and one from Mr. Langstroth's shallow hive; put each into hives just large enough for said combs, with bees enough to occupy the combs, and a fertile queen in each. You have got to have more bees, according to the surface of comb, to occupy those combs, than you would if that comb surface were in a more compact form. I would sooner have the surplus honey in the body of the hive for the use of the bees in spring, at the side than at the top. With the practical working of the hive I use, I am perfectly satisfied. For breeding purposes or wintering, I would as soon have a comb on one side of the bees, or both, as I would a board; and I am not sure but I would sooner. After all my experimenting, I am satisfied that hives can be too high for storing surplus honey, as well as on the opposite extreme, too low. High enough to have sufficient honey above the bees for the coldest weather, is sufficient.

In another article I give you the practical working of the form I use, I care not whose hive you call it. Mr. Langstroth's agents, and other agents also, have urged me to try their hives. I have never mixed myself up with any form of patent hive; so I ought to be as good a judge as those that are interested. I have had bee on the brain for the last thirty-five years. So Mr. EDITOR, you will have to have some patience with me for occupying so much space in your JOURNAL.

E. GALLUP.

OSAGE, IOWA.

[For the American Bee Journal.)

"A profitable Apiary" examined.

MR. EDITOR:—I find in your JOURNAL for November an account of Mr. Way's success in the bee business, furnished by Mr. Baldridge.—As I know no better way to come to just conclusions relative to the best mode of conducting the business, than by experiment and observation, I am always pleased with a definite report of results in different apiaries and in different hives.

This apiary consisted of 125 colonies, 18 colonies in hives that gave no swarms, and 107 colonies that gave swarms, constituting in the sequel 105 new colonies, and the product of surplus honey was about 2,920 pounds. If apiarians would keep exact accounts of their surplus, so as to render it unnecessary to calculate from about so much, it would be more satisfactory. The eighteen non-swarmers gave an average of 60 pounds each, at 30 cents per pound, or $18.

The product of the 107 colonies is, 105 new colonies and an average of 27¼ pounds per hive.

A colony of bees will consume for breeding, drones, &c., during the summer season and for wintering, 60 pounds of honey. The eighteen colonies that gave 60 pounds surplus, and con-

sumed 60 pounds, gave one half of the honey they gathered to the keeper, in surplus. The 107 colonies, with their 105 new colonies—together 212—consumed 12,720 pounds and gave the keeper 2,920 pounds.—While the first-class gave one-half to the keeper, in surplus, the second-class gave 208 pounds less than one-fifth in surplus, and consumed 202 pounds more than four-fifths of the honey gathered.

Is the consideration given to this view of the subject which it deserves? Thus, 130⅓ colonies in the first-class of hives, would have gathered 15,640 pounds, giving 7,820 pounds in surplus instead of about 4,000 pounds. This difference in surplus would pay for change of hives several times over—a difference, at thirty cents per pound, of more than 1,000 dollars.

I this spring had four colonies in a new hive, which I patented July 2, 1867. The product of the four colonies, this year, was four new colonies and 500 pounds of surplus. One of the four was an Italian swarm; three of them natives. The product of the Italian swarm was two new swarms and 106 pounds of surplus; of one of the natives two new swarms and 97 pounds of surplus. The other two natives gave no swarm, but one gave 123 pounds of surplus and the others 174 pounds. Each hive has eighteen surplus honey boxes, of the capacity in the aggregate of 125 pounds. It will be noticed that the two that gave no swarm gave 57 pounds more than two-thirds of all they gathered, and consumed 57 pounds less than one-third. My honey was more than two thirds of it from white clover, and most of it sold for forty cents per pound.

Every field is limited in its production. It is of some consequence to the bee-keeper whether he uses hives in which his bees will give him two-thirds of the product or only one-fifth.

ALBANY, N. Y. JASPER HAZEN.

[For the American Bee Journal.]

Room for Surplus Boxes.

MR. EDITOR:—In the BEE JOURNAL for February, I saw in a communication from Mr. Langstroth, a plan for a Langstroth hive with deep frames, giving at the same time extra room for surplus honey boxes. I have a plan which I like better. Last summer I put a swarm in a hive made as follows: Take a Langstroth hive 16 inches long, 12½ inches wide, and 10 inches deep, with frames. And, instead of a honey-board, make a triangular top without frames; the base the right size to fit the hive, and bars of lath tacked on to prevent the bees from building combs to the frames. A top of this kind will hold eight six-inch boxes and makes a hive 13 inches deep. I got the idea from a hive patented by T. F. Bingham, of Gowanda, N. Y.

I am wintering thirty-six hives in different ways, and may report in the spring. Yesterday, February 19, was the first time the bees flew out, of any account, since winter set in about the last of November.

J. WINFIELD.

CANFIELD, OHIO.

Handling Bees.—No Protection used.

"I had bees creeping in my ears last season, under my veil. I would therefore advise putting cotton in, before commencing operations." BEE JOURNAL, vol. 3, page 160.

No, no, friend Hulman, don't advise us to do any such thing. We want to use our ears, so that we can know when our bees are in a pleasant mood.

That veil of yours, please give it to your wife, if you have one. *You* don't need it. No *practical* bee-keeper should wear a veil, or a bee-hat, save in extreme cases. Some pains will then be taken to handle the bees properly; and where this is done, they will keep in good humor throughout the season. I write from many years' experience in handling bees, and therefore know what I have affirmed.

My friend Marvin, of this place, is as successful as myself in handling bees without protection. His experience is also quite extensive, as his apiary is one of the largest in the Western States. It now consists of 300 colonies of very choice Italian bees, and just now they are in winter quarters, and wintering finely. He has no Italian bees that do not show three yellow bands distinctly. Those showing a less number of bands were banished last fall.

To return. We both use wood smoke, and no further protection than what the smoke affords, in our manipulations with the honey bee. We have no trouble in accomplishing with that kind of smoke, all that we desire. Its pungency, when rightly used, will subdue any hive of bees, whether Italians, natives, or the ill-tempered hybrids. Friend Marvin, I believe, keeps a supply of bee-hats, made of wire, for the use of visitors, of whom he has a great many from all parts of the country. These bee-hats are worth many times their cost to him every year. They are first-rate for "caging his visitors," so that they cannot pitch into his choice fruits! for be it known that Mr. Marvin is not only a practical bee-keeper, but likewise an amateur fruit grower. So it seems a bee-hat is of some use.

We have, of course, no use for the celebrated "bee charm," and in this connection let me inform the JOURNAL readers that the discoverer is reported to be dead! I hope, therefore, they will henceforth let him "rest in peace." My informant may be mistaken. If so, we would like to have the report corrected by the "Prof."

M. M. BALDRIDGE.

ST. CHARLES, ILL.

[For the American Bee Journal.]

Centre Passages.

There is much said about bees cutting or making centre passages. It is found that in some hives there are many such passages, in others but few. Many are at a loss to understand how this is? My opinion is that all such passages are made by the bees in their attempts to remove the larvæ the moth. Hence those hives which are most affected have the most centre passages. J. H. THOMAS.

BROOKLIN, ONTARIO.

[For the American Bee Journal.]

The Economy of the Bee Hive.

If it be a fact that bees can live "for days and even months" without a change of air, it certainly is a wonder worth investigation, and must be accomplished by means of those simple and beautiful laws that a wise Providence has set up to govern the most insignificant as well as the greatest of his creations; and when we come to understand it, it can but increase our admiration of the infinite wisdom and skill of that Great Being, who brought such perfection out of chaos.

All animated beings require the same kind of air to support life. Without it they could not exist. That air surrounds us on all sides. Chemists tell us that it is composed of two gasses, oxygen and nitrogen. One atom of the former to two of the latter. It is only the oxygen we need in breathing. When we inhale air into our lungs it is brought in contact with the blood. The air parts with the larger part of its oxygen, which is absorbed by the blood, and receives in exchange another substance derived from the food we eat and called carbon, and another called hydrogen; so that when it is exhaled it consists of nitrogen, oxygen, carbon, and hydrogen; but they are not all united in one substance or compound. The oxygen has united with hydrogen and has produced vapor or water, and with the carbon and the result is carbonic acid. The air we inhale is nitrogen and oxygen; the air we exhale is water, carbonic acid, and nitrogen.

This carbonic acid gas is poisonous and destroys the life of any breathing creature even when mixed with a large quantity of common air. It will put a light out instantly. It has another peculiarity which is singular: its weight. Although only air, you can pour it from one vessel to another. When it is breathed out being mixed with the hydrogen and nitrogen which are light and being expanded by being warm, the volume of breath is lighter than the common air, and ascends; but it cools and by degrees separates from the other parts of the breath, and sinks to the ground.

Everything living breathes the same kind of air, with the same results. Warm blooded animals, men, beasts and birds, breathe a great deal. Cold blooded animals, snakes, lizards, frogs, fishes and some insects and small vermin, breathe very little. Bears, dormice, and the bird called the martin, and most insects, become torpid in winter, and during that time scarcely breathe at all. They become cold, and their breathing and the circulation of their blood stops.

Now let us return to the bees. They are stopped up in their hive so that no fresh air can reach them. They breathe the same air over and over; all the time converting it into this carbonic acid, which gradually rises like an inundation, and the last one of them would die. Is it so?

Science to be of any value must prove things as they actually exist; but the deeper its researches, the stronger the proof that we live in a world of paradoxes, and that creation is to our limited understandings a maze of contradictions. It has by the aid of discovery reconciled many of these, but many baffle their ingenuity and still remain hidden mysteries. One thing is certain, that the greatest contradictions, and the most opposing elements, all combine together and produce results perfectly concordant.

For ages fishes were kept as pets. They were placed in vessels of water, but they could only be kept alive by the most careful attention. Daily the water had to be changed or the fishes soon died, and for the same reason that we have been trying to explain. They have to breathe as well as other animals, though not so much, and they obtain their air from the water. When they breathe over all that they have in their limited cage and convert it into poison, they die like any other animal deprived of pure air. New discoveries have remedied all of this difficulty. Now they can be kept for years in the same vessel without a change of the water in which they live. This is accomplished by the application of one of those simple laws of nature, of which we spoke.

Plants breathe as well as animals, but they take in through the pores of their leaves this very carbonic acid, that animals throw out. The sap absorbs the carbon and again sets the oxygen free to unite with the nitrogen and restore the air to its original condition. When this was found out the whole thing became easy. It was only necessary to place in the water such plants as would grow there, and the thing was accomplished. The plants would use up the carbonic acid and set the oxygen free to be again used by the fishes, while the fishes in turn would breath the restored air and make a new supply of carbonic acid for the plants.

But there was another difficulty. The excrement of the fishes and the decay of the plants would in time make the water so foul that, it was unfit to sustain life in either fishes or plants. Another beautiful discovery supplied a remedy for that. It was found that snails, and other kinds of small water animals, actually lived on these very things as their only food; and that these little scavengers, made from this decayed and foul matter, became good food for the fishes.

Out of these discoveries originated the *Aquarium*, which has in it all the elements of the reservoir in which the fishes lived; that is, fishes to breathe the air and produce carbonic acid, plants to use the carbonic acid and restore the air, and snails to eat the foul matters that would accumulate, and thus keep the water pure, which snails in turn became food for the fishes to live on.

God did this, not man. When he created the fishes he made an aquarium for them. Was he less mindful of the "little busy bee," when he gave it a habitation in holes in trees, where from the very nature of things, they would be frequently deprived of fresh air for months at a time, on account of snow and ice and sleet closing them up? Experience says not.

The bees produce by breathing carbonic acid,

which, if there was nothing to take from it the carbon, would destroy them. There are no plants to do it; but we find in the hive several things that may answer the purpose. The comb, it is well known, is at first pure white, but first turns yellow and then dark, and as it gets older becomes perfectly black. Something must produce this effect. May it not be this very carbon that it absorbs that colors it? It is further known that the older the comb the heavier it gets. This is not only true of the comb in the middle of the hive where the breeding is done, but more so at the top where honey is stored. It may be said that carbonic acid is heavier than the other air and therefore settles below. We have shown that it first rises, from being heated and thus rarified.

The honey may also absorb the carbon. New honey and old honey are very different things in taste and color. So may the bee-bread and also the propolis.

The fact being established that bees can live without fresh air, we can only account for it upon some such reasoning.

But this would not be enough. Bees cannot live without water. Here we are not so much in the dark. We have shown that oxygen and hydrogen are united in the course of breathing, and thrown out as vapor. This is condensed on the solid sides of honey, and on the vacant comb and sides and top of the hive, which are dense and cold, and remains there hanging in globules or runs down in drops among the bees. Thus they are always furnished with water. It is also a wise provision, that it only so accumulates in cold weather. In warm weather there is a class of bees that are called "fanners" or "ventilating bees" that keep a constant circulation of dry fresh air.

It has often been wondered at that bees should plaster the solid sides and top of their hive with propolis. In some very old hives I have seen it nearly a quarter of an inch thick. The wood being porous would absorb the moisture, and they wax it to make it solid and a better condenser. May it not be also to absorb carbon?

D. L. ADAIR.

HAWESVILLE, KY., Jan., 1868.

Smart Bees.

One of my neighbors had an old hive of bees that last season threw off three swarms, two large swarms and one small one. The last swarm, after working two or three months, and making considerable comb, but not much honey, swarmed out one pleasant day in the fall, well knowing that they did not have sufficient honey to winter on, and returned again to the parent hive. Who can beat that?—E. W. B. *in Country Gentleman.*

☞Pollen gathered by the bees from Centaurea, (blue bottle), is white; that from white clover, is dark cream color; that from buckwheat, bright yellow; and that from Esparsette or Spanish clover, is brown.

[For the American Bee Journal.]

Bee Hunting.

MR. EDITOR:—Is it possible for one to have bee on the brain? I have been engaged in the culture of the honey bee for twenty years, and have many pleasant recollections concerning them—so much so, that my family sometimes tell me that I have got the bee on the brain. But this I am not disposed to consider serious, unless the sting of my pet should chance to remain. Even then I should not mind it much, as I do not experience any harm therefrom.

I always considered it a very pleasant and agreeable recreation to hunt the bee. To look them out, and trace them to some large giant in the forest, requires at times considerable skill and sharp-sightedness. I have found them varying as to height, from on the ground to one hundred and thirty feet from terra firma. I I have never given up the hunt until found, if there was any show at all. It is a harmless, but not always profitable recreation. Of late years I usually take them down in the log.

I propose to give an account of my short experience in hunting bees on the James, in Virginia. I came there rather late in the fall, remaining in the State until about the middle of July. In looking around I soon ascertained that there were very few swarms there, except in their natural wild state. When getting some sweet gum in the month of November, I noticed the bees gathering the gum as they usually gather pollen. From that source I obtained several lines; but did not find the swarms at that time, as I had no honey, and it was late in the season and rather cool. I concluded to let them rest till spring. In the month of March I noticed bees at work on an apricot tree in blossom. I watched them as they were gathering pollen. From this source I obtained five different lines, of which I resolved to find most or all of them. You may be assured I was on tiptoe, and almost went into ecstacies. Now for the result. Without honey I took one line, and with careful looking found it in an oak limb about twenty feet high, about a mile and a half distant. Now for number two. After a pleasant search of about three hours, I found them about three-fourths of a mile distant, in a stump of an oak tree cut several years before. The stump was not more than three feet high; and the swarm as fine a one as I ever found at that time of year. After a search of about half a day, I found number three in an oak tree, about eight feet from the ground. It was a fair swarm. Perhaps if you had seen me at this time, Mr. Editor, you might might have thought that I had bee on the brain, though you would never have said so. So excuse me, and bear with me a little longer. Number four crossed the river, and as I had no boat I made no effort to find them. I followed the line of number five about half a mile, and found them in a green oak stump about four feet high, which had been cut perhaps two years before. This was a fair swarm.

From another source I obtained another line, starting from near the same place as the others.

This swarm proved more difficult to find. When I looked where they ought to be, they were not there. At last I found them going into a root on the ground and thence into the tree, which was a small oak in an opening. This was far beyond my expectations.

Now for a little extra luck. On the 28th of April, I found and hewed a very fine swarm. In ten days they filled their hive, and seemed almost ready to swarm. At this time I broke out their honey. May 31st, went to see my swarm in the root, when to my surprise, on a bush, about twelve feet from the old stock, hung a young swarm waiting to be hived. I returned to the house, procured a hive, hived them, and they were doing well when I left.

I have lived in the Eastern States, and have been beyond the Mississippi, all the while having an eye to bee-culture, and from what I know and could learn, I should prefer Virginia for a short term of years to raise bees for profit. The winters are short there. A knowledge of the bee could be made to pay in large ratio.

I have wintered my eighty stocks without the loss of any. W. C. NEWTON.

OSWEGO, N. Y.

[For the American Bee Journal]

Wintering of Bees in the Open Air.

For many years I have been persuaded that bee-keeping would never flourish as it should, unless some cheap and simple mode could be devised, by which bees may be safely wintered on their summer stands, instead of being placed in special depositories. To say nothing of the cost of such structures, and the great labor and judgement needed for their proper use, they are open to disadvantages which cannot be remedied, even by the most skilful and prudent management. After the bees have been placed on their stands, if the weather suddenly changes, a cold wind springing up and clouds obscuring the sun, it is often found that as many bees are lost as if the colonies had wintered in the open air. Stocks that have wintered well on their stands, are usually more forward in breeding than those of equal strength which have been put in special depositories. When first set out, the latter have a deceptive appearance of strength; for the old and feeble bees which would have died if they had been wintered in the open air, perish soon after they begin to fly.

However successful skilful bee-keepers who have large apiaries, may be with winter depositories, the great majority of those who keep but a few stocks, will never winter them anywhere but on their summer stands.

After years of experimenting, I have devised a cheap and simple plan which promises to effect as great a revolution in the wintering of bees in movable comb hives, as the movable frames have produced in their summer management. By this plan prudent bee-keepers may winter bees in the open air, in hives having movable frames or bars, as well (if not better, all things taken into account), as in any special depository. The plan is applicable to any old hive now in use, and will be made known in ample time to use the ensuing winter. My health and the pressure of other duties, will prevent either myself or son from replying to any letter of inquiry on this subject. If the plan should be patented, all parties owning the right to use the Langstroth hive, will be entitled to use this plan, without any charge, as long at least as my extended patent is in force.

L. L. LANGSTROTH.

OXFORD, BUTLER CO., OHIO.,
March 30th, 1868.

[For the American Bee Journal.]

Wintering Bees.

MR. EDITOR:—If all bee-kepers read your valuable paper with the same interest that I do, I am sure they will endeavor to contribute something for its pages; and the more the better, as I am sure you will select the best for the greatest number of your readers.

As my success in wintering bees, and how I do it, may be of interest and value to others, I communicate it for their benefit; and if any have a better plan, let us have it, for it is certain that the loss in wintering bees, in this section of country at least, is more than from all other causes combined.

After experimenting in different methods of wintering, some of which were better than an out-door exposure and others not so good, I judged it more economical to build a *permanent* house for this purpose. Selecting a place convenient to my apiary and of easy access, I commenced operations by making an excavation seven (7) feet wide, eighteen (18) feet long, and three and a half (3½) feet deep, and bricked it up level with the ground, except a space in one end for a door. On this wall I built the house, with side walls two and a half (2½) feet high; with good tight roof, and two ventilators therein, one at each end; with tight double-doors at one end. After lathing and plastering it entire on the inside, and giving it a cement floor, I considered it complete, sufficiently roomy for about fifty stocks of bees, with a passage way between the ranges of hives, so that any of them can be seen and attended to at any time. When setting in my bees for the winter, I take off the caps of the hives, and put a straw mat over each.

The advantages which a house of this kind possesses over any other are, 1st, an even temperature, or so much so that you can regulate it at will. 2d, ease of access at all times; and never fearing any loss from fire, which might occur if they were kept in the cellar of your dwelling. 3d, it provides a convenient place in summer for extra hives, honey-boxes surplus honey, tools to be used about the apiary; and in short, a repository for everything you want just where you want it. 4th, and what I consider of the utmost importance, my bees consume one-half less honey than when wintered on their summer stands.

I know that some claim that bees wintered on their summer stands, will breed earlier and more rapidly. But I have failed to discover it, or see it in that light; and have no difficulty in making my bees breed as early as I want them to do. This much I do know, that, taking one year with another, more than one-half of all the stocks wintered on their summer stands, perish from cold and starvation, unless in *very large* hives. I mean in this section of country. Perhaps some would set it higher than this. I have now kept bees in this house two winters, and have lost only one stock, and that died from the want of honey, through my neglect. In the others the bees and combs were in the very best condition.

For one, I think it pays to have a suitable place to keep bees in the winter; and I care not what the hive is, or whose patent, if it is a *bee hive* fit to be used at all. We cannot keep temperature as we would like it in this cold disagreeable climate, without some other protection, notwithstanding different venders cry *Eureka*.

B. J. HOXIE.

COOKSVILLE, WIS.

[For the American Bee Journal.]

A Safe and Perfectly Reliable Method of Introducing Italian Queens, even by a Novice.

When the Italian queen arrives, put her into the wire cage sent with her, and tie firmly over the end of it, a piece of old factory cotton. This should be done in a close room, so that if the queen happens to fly, she cannot escape. Now find and destroy your black queen; then cut out from a card of comb a piece the size of the queen cage, but one inch longer; insert the cage so that the bees can get at the factory cotton. The cage should always be inserted near the centre of the combs, or where there is brood, so that the bees will be sure to cluster about it. Within forty-eight hours, they will generally liberate her, by eating through the cotton, and she will be all right, no further attention being required. But should it so happen that at the end of forty-eight hours they have not eaten her out, a small opening may be made through the cotton with a pen-knife, that the bees may be able to enter the cage if they wish. It is well to smear the cage and the cloth with a little honey, after it is put into the comb, to attract the bees to it. A few drops are sufficient.

This method may be practiced at any season of the year; and the cage with the Italian queen may be inserted immediately on removing the black queen.

If the bees are in a box-hive, they must be driven out, the old queen captured, the caged queen inserted between the combs, and the bees returned. In searching for a black queen in a frame hive, it is better to smoke the bees only a little, because much smoking will frequently cause the queen to leave the combs and run on the sides of the hive, where it is more difficult to find her.

J. H. THOMAS.

BROOKLIN, ONTARIO.

[For the American Bee Journal.]

On Wintering Bees in the open Air.

In the January number of the BEE JOURNAL under the above head, Mr. Langstroth says:—"Intelligent apiarians are aware that most bee-keepers in cold climates, who winter their bees in open air, are not satisfied with their success in any style of hive yet devised."

It is evident from the above and a well-known fact that ordinary hives are not constructed sufficiently warm to prevent loss of bees from chill, in detached clusters, among the outer ranges of comb, during sudden changes from warm to cold weather, as described by Mr. Langstroth, in the article referred to.

For many years, until recently, it was very generally supposed that all that was necessary for the successful wintering of bees, on their summer stands, in the open air, was to admit extensive upper ventilation—the object being to prevent the creation or retention of excessive moisture in hives in winter. But this was found to admit too freely the escape of the animal heat of the swarm, and consequently was not well calculated to prevent loss of bees from chill or the impression of cold. And I never could believe that to remove the honey-board late in the fall, and substitute "corn cobs," or even a nicely made straw mat, instead of a covering perfectly air-tight, such as is natural for bees to prepare, would add anything to the prosperity of the swarm. For the reason, that the bees, at that season of the year, cannot "seal up" and give it a coating of propolis or bee-glue, which would prevent the free escape of animal heat. Besides, a straw mat, without such preparation, absorbs so readily the moisture arising from the exhalation of the swarm in cold weather, that it soon becomes quite wet, and consequently cold, and often moulds considerable. The absorbant quality of the straw, therefore, is of no use in the hive or mat.

Contrary to the prevailing opinion the coating of propolis given by the bees to the inside of hives constructed of straw or other porous material (thus rendering them impervious to air and moisture), is indespensable; as they are then only in condition to retain the animal heat of the swarm. Thus conditioned, the warm air arising from the swarm, and coming into contact with its warm interior surface is not condensed; and thus the creation of moisture is prevented, and "prevention is better than cure."

ISAAC IDE.

MEDINA, N. Y.

I have known hundreds of cases, where bees which were accustomed to the presence of an old fertile queen in their hive, treated one recently ferilized, introduced after the death or removal of the old one, not only with indifference and disregard, but with as much animosity as though she were a stranger or a virgin queen—either rejecting and destroying her, or becoming reconciled and accepting her only after prolonged resistance.—BERLEPSCH.

[For the American Bee Journal.]

More Light on the Subject.

George M. Taber, of Iowa city, under date of August 17, 1863, writes me, in substance, as follows:—C. D. Bent, whose present address is Grand View, same State, has been taught *by experience*, that where bees are storing honey rapidly, they will fill two sets of boxes about as soon as they will one. And for this reason:

Bees will not *seal the cells* until the water in the honey evaporates. When they have access to one set of boxes only, several days of storing surplus are lost before a new set can be given them, as the honey should not be removed till the cells are closed, especially when designed for market. They will, it is true, deposit the honey in the main hive; but this, in many cases, is detrimental to the colony, occupying cells that are needed for brood.

To return:—When the boxes are nearly full, they are raised up and another tier put under them. *Slits* are made in the tops and bottoms of the lower set. By this arrangement the lower tier is full by the time the upper boxes are *ready to seal*. A section is added to the cover, to raise it one tier of boxes higher. Mr. Bent uses eight boxes in each tier. His hives have two portico fronts, and the cover is made longer than those in common use in the Langstroth hive.

To conclude:—From the above it will be seen that two sets of boxes for a hive were used in Iowa, at least two years before the "Mysteries" were rewritten. But that is no proof that the author did not use them till that year. Nor is the letter, given above, any proof that this plan of getting honey was unknown in the West prior to 1863.—Who will give us more light?

M. M. Baldridge.

St. Charles, Ill.

[For the American Bee Journal.]

Scouts employed.

Do bees just before swarming, or while clustered preparatory to their final flight, send out scouts to select, and guide them to their future home?

Of this, J, S., under the caption of "*Curious Instances of Swarming*," in the March number of the Bee Journal, seems to express a doubt. Permit me to match his *curiosities* of bee behaviour with an instance not less curious, which very clearly indicated that the above query should, in this case at least, receive an affirmative answer.

During the swarming season of 1866, having several Langstroth hives containing dry combs, I prepared them for the reception of issuing swarms, and placed them in my bee house to await calls for their use. One day while occupied about my apiary, I observed strange bees alighting on one of these hives, located about fourteen feet from the door, and passing in and out as if examining the premises and resolving some important question relative thereto. This they continued to do until I closed the door at evening. Suspecting their object, early next morning I threw the door open, and in a few minutes had the pleasure of greeting the visitors of the previous day. With great assiduity, they continued their examination of the same hive, with an air that seemed to indicate that they felt themselves charged with a mission of great responsibility, and even commenced house cleaning. These proceedings continued until about eight o'clock, when suddenly a respectable swarm made its appearance at the door and passed directly to the hive thus indicated; and in a short time was quietly domiciled in it.

Very evidently the bees which first came were pioneers, sent out in search of a home for the family about to emigrate; and having found one which they deemed suitable, they communicated the fact, and then guided the household to the chosen abode.

D. Witter.

Burton, Ohio.

[For the American Bee Journal.]

Scouts, or no Scouts?

Some persons believe that every swarm of bees, at the time of issuing, have a home selected, and know just where they are going. Others believe that they have to hunt a home, in every case, after issuing. I think that in some cases they have their home not only picked out, but cleaned out ready for use. In other cases, however, judging from the distance they go after issuing, it seems evident that they have to hunt their home as they travel.

I have two cases in point. When I was a boy wild bees were very plenty in the woods. My father one day, in the swarming season, took a walk in the woods, and when he returned told us little fellows that he had found a "bee tree," and that if we would hoe corn well till Saturday we might go with him to cut it. This was on Thursday. Well, on Saturday evening away we went to cut the tree; but when we got there, father said he could not see them at work, as he did the other day. Yet, as the tree was small, we would cut it at any rate; which we accordingly did. But to our great disappointment not a bee was in it, though there was a very nice place for them. While we were there, sitting on the trunk of the tree, and my father wondering how he could have been so deceived, (for he said they were working "very strong,") we heard a loud humming in the air, like that of bees swarming. Soon a swarm of bees made their appearance, flew around awhile where the tree had been, and then clustered on a bough near by. My father always believed that what he saw were bees cleaning out the cavity, preparatory to the reception of the swarm.

Again, I have the only Italian bees in this county. Two summers ago, I had a swarm of Italians leave me and go north-west into what is called the Big Woods. The next summer there was a colony of Italian bees found eight miles distance from my house; and from appearance it had been there about that length of time. These surely did not have that home picked out, in advance, at that distance; though without doubt they were my bees.

Winchester, Ind. B. Puckett.

[For the American Bee Journal.]

Bee-Keeping, and Scouts.

MR. EDITOR:—I wish to say that I am very much pleased with the BEE JOURNAL. The March number is worth six months' subscription. I believe it is growing better and better. While reading Novice's anticipations for the coming season, I see that others also have "great expectations" of a good bee time coming, just as I have.

The long winter is almost gone, and we shall soon set the bees out and let them fly. What a humming and buzzing there will be! Beautiful sounds, how I do love to hear them! I have been opening some of my hives, and found young brood in the largest stocks on the first of March. I am expecting some early swarms this spring. I intend letting some of my stocks swarm naturally, and some I shall divide before swarming time. I am going to get some Italian queens, introduce them, and go through all those manœuvers that I find explained in the JOURNAL, for I wish to know how to perform all those necessary manipulations. I am not exactly a novice for I have learned two things in bee-keeping. One is, not to try to winter small or late swarms; and another is, not to get out of honey by selling myself short. If it is possible I will have bees enough to supply the honey that is wanted.

Bee-keepers tell about curious instances of bees swarming and flying away to the woods; and none of them agree in thinking that they have a hollow tree selected beforehand for a home. Now I think this is not always the case, though they may generally do so. The first swarms, with which the old queens leave, appear to know where they are going; but late swarms do not always. Four years ago, this spring, a swarm of bees was seen going past where I live, about nine o'clock in the morning, flying very low and slowly as though they were tired. They went on somewhat less than half a mile, lit on a bush, and hung there while they hunted up a tree to go into. They started comb on the bush, then left and went into a tree about forty rods from the bush, where they were found and taken up in the fall.

Another instance is where, in company with others, we found a swarm of bees, in September, settled on the limb of a green spruce tree, right in the open air. They had built three sheets of comb about the size of a man's hat.

I could give other instances; but enough for the present.

WILLIAM C. MERRILL.

COLEBROOK, N. H.

☞The consumption of pollen, by the bees, when building comb, promotes the production of wax and effects a saving of honey.

☞Pollen is rarely found deposited in drone cells. The bees probably find a difficulty in storing it in such wide cells.

[For the American Bee Journal.]

Solution of the Query.

Mr. Davis, of Youngsville, Pa., in the February number of the BEE JOURNAL, has related an occurrence of a colony of bees accumulating a large amount of honey and pollen, and not raising a worker or drone: and inquired in what condition the queen was all the time.

We do not know that we can give an answer that will be satisfactory to all; but will relate an occurence that came under our observation last season.

We had removed a queen from a colony, and given it a young one with every appearance of being fertile. We had occasion to look into the hive about ten days afterwards, and to our astonishment found no brood, though the combs were filled with eggs. We noticed that some of the eggs did not look right—some being very small. The queen appeared to be all right. We closed the hive, let it remain about a week, and then examined it again. It had the same appearance as it had at the first examination. Some of the eggs seemed freshly laid, and some had become contracted in size. We thought best to destroy the queen and introduce another.

Mr. Davis' colony may have been in possession of a queen of this stamp. There was, as he says, not a worker or drone reared in the hive, for in the above case not one of the eggs ever hatched. The queen in Mr. Davis' colony may have died, or the bees may have destroyed her sometime before he became aware of their condition.

If others can give a better answer to his inquiry, we should be glad to have it.

C. B. BIGLOW.

PERKINSVILLE, VT.

[For the American Bee Journal.]

What a Wasp's Nest is good for.

Bring wax to a boil, put in a layer of wasp's comb, saturate it with wax, and drain it. It makes the best bee feeder—better than boxes or honey-comb.

I shall try it in honey harvest as a substitute for artificial combs, for bees to store honey in. Would it not make a capital comb to put into the comb emptying machine, being so firm and hard? Or, as it will stand heat enough to boil wax, put the frames in a very hot room, and let the honey run out.

You say in your February number that you had given up most of the paper to correspondents. I think there are a great many useful hints among the different articles, and shall be glad always to see such.

I am sorry I cannot, by doubling my subscription, receive the JOURNAL semi-monthly, instead of monthly; and hope soon to see it so patronized as to justify its more frequent issue.

J. M. P.

BUFFALO GROVE, IOWA.

[For the American Bee Journal.]

Remarks and Suggestions.

As there are many correspondents, entertaining various views and proposing different schemes of management, some practical and some experimental, I suppose one must let his ignorance be known in order to learn something.

I have kept bees for the last fifty-five years, in fact from boyhood till now. I early observed that there was a difference in black bees. One kind was more vicious, being smaller than the other. The other is larger with rings on their bodies, and more docile. I removed to Ohio in 1833. Here I found the same races. The small kind was more apt to desert when swarming, and go to the woods. When kept for a length of time, the first swarms took to the woods; the others staid better.

I live within thirty rods of timber on both sides. I always sell bees when any want to buy. I have always let them swarm, until I obtained the Langstroth hive. I used to be opposed to all patent hives, as I had one that I could get thirty-five to forty pounds of honey from, when honey was to be had.

Now, for the theory of old hives. I always turned up my old-fashioned hives in the apiary, and cut all the drone combs away; and the bees almost invariably built worker combs in their stead. Thus I got what honey the drones would have required for their rearing, and saved what they would eat while living, which in some hives is almost all the workers can gather in breeding time—leaving none for the owners. I did not put boxes in, but let the bees go up in the chambers. Instead of lying out, they would fill the chambers while preparing to swarm, and were thus kept busy; and I obtained some good honey before the swarm issued. Sometimes I used smoke to drive up the bees the second day after swarming, and inserted a royal cell for another hive. By driving the bees up and fastening the cell with a brass pin to a comb, they would swarm on the second day after the young queen was hatched, if the hive was crowded. Sometimes the old queen would get at the cell, and kill the young queen therein. If the old one is about ready to go, she will leave before the young queen hatches. When the young one emerges from the cell, she will destroy those the workers were rearing. In that case there will be no second swarm.

There is very little, if any, useful practice with old fashioned hives, but to drive out the bees into an empty hive and set it on the same stand; then take the hive of brood and remove some strong hive when the workers are chiefly out, and they will rear queens and swarm sooner than if left as they were. But this had better be done by practised hands. I have cut out queen cells and fastened them in hives, the bees of which were lying out heavily, the queen cells being just ready to hatch. When hatched, the bees on the outside went off in a swarm with the young queen.

As to patent hives, there are but few that are of any consequence to the public, only to spend money on and waste time. The moveable frame combs of Mr. Langstroth is the best for practical use. All being made alike, when anything occurs in the colony it can be remedied. If a queen dies or is lost at any time while drones are about, the loss can be supplied by inserting a frame with brood. But if the queen die or is destroyed late in the fall, the hive had better be supplied with one from a colony that has not honey enough to winter, or by uniting the two—thus saving both. All the combs should be carefully preserved for the next summer. They are worth half a swarm, to make artificial swarms with next season. I use Langstroth's hives with twelve frames. I think where a man has too many kinds of hives in his apiary, he is not using economy, as he will often have to adjust parts or change some.

My Langstroth hives have yielded me more honey than any others. I have about one hundred colonies on hand now; and have received over two hundred and twenty-five dollars for honey sold, besides using quite an amount for home purposes. My stocks are mostly Italianized. The Rev. D. Witter obtained two queens of Mr. Langstroth's last importation, from which I have Italianized my apiary. Some have beautiful yellow bands, and some are hybrids, though finely banded. I have before referred to a kind of bees of larger size than the little black bees. Some of our bee-men pronounced them Italian hybrids. But there were then no Italians nearer than Mr. Sturtevant's, in East Cleveland, thirty miles off. I think the disposition of bees is often in accordance with that of their keepers. The little black bee has a peculiar trait to sting; while my others, and my Italians and hybrids, are always peaceable.

I prefer to take frames of brood from one hive and the bees from another, when making my artificial swarms, which does not unduly reduce either stock. Handle bees as little as possible, and with gentleness at all times. If they are respected and not disturbed, mine do not disturb anybody. But my Italians visit some of my neighbors, who are careless with their hives and honey; and these then think the Italians are not strictly honest. I think the Italian bees will run out the old kinds in time.

I wish to ask one question. On making an artificial swarm and failing to obtain a royal cell the first time, another frame of brood was put in, and the bees built a royal cell on the opposite side of the comb next to the brood. Why was it not reared on the brood comb that was put in last, as the royal cell was reared at the last operation?

I think the BEE JOURNAL is just the thing for every one that keeps bees, whether he has few hives or many.

J. T. MERRIMAN.

BURTON, OHIO.

Bees are variously affected by different colors. White blinds them, and black is disagreeable to them. Hence the front of a hive should not be painted white; and the bee-keeper should not wear a black dress. Hives when ranged in a row on their stands, in close proximity to each other, should have at least their fronts painted of different colors.

[For the American Bee Journal.]

Italian Bees and Breeding. No. 2.

It is generally known by most bee-keepers having many years' experience, that swarms taken from the woods and located in an apiary with other bees, show superior qualities, and generally run the others out in a few years by being superior workers, breeding faster, swarming earlier and more frequently; and are better at robbing their weaker neighbors, by keeping themselves strong. The probable reason of their superiority is, they are accidentally well bred, and being the best, are the ones to fly away from persons that don't know how or neglect to keep them. Being located at a distance from their near relatives, they are generally surrounded, in their new homes, by large numbers of drones not near related, that overbalance their own, thus making a good cross, and improving them still more. We may make a sure thing, improving the good qualities of bees, by breeding artificially. Having a queen that produces superior stock, it is best to get another queen from a distance, so as not to be near related, as breeding in and in, will spoil the stock sooner or later, if persisted in. One queen should furnish eggs for queens, another eggs for drones; and if other hives are near remove all drone cells, or kill the drones in the comb by cutting off their heads before hatching, or trapping and killing after they are hatched. If a large quantity of drones are wanted, place the drone comb in the hive with the drone mother, and after it is filled with eggs it can be returned, for other hives to rear the young drones. Allow all other hives but the two parents to produce neither queens or drones of their own; but they can supply workers to make the swarms for the young queens from the one parent, fertilized by the drones of the other. That is one way to improve the stock. Choosing with care the dark Italians that some seem to prefer, and working perseveringly for a few generations, they will rival the native blacks, and still be more pure than when imported. By choosing the best qualities of different parents we can improve in the different directions, be it in disposition, working, or color. If the light yellow is preferred to the dark, they can be bred to be a clear yellow, if not so already; so as to rival the goldsmith's (referred to in BEE JOURNAL), and still be more pure the longer they are bred, if not crossed with the blacks or other breeds. The Devon cattle, the most constant in color of any breed known by me, can be bred a light Richmond cherry red, or the color of the darker morello cherry, by selecting the parents showing those colors and for the attainment of that particular shade of color.

JAMES M. MARVIN.

ST. CHARLES, ILL.

We ought never to know any more about nature than we can observe. We *know* what we have *observed*, and not a jot more; and if we think that we do, we are in error.—MUDIE.

[For the American Bee Journal.]

The Color and Fertility of Queens.

Last summer, while raising queens, I started a lot of cells in a queenless colony. These were removed as soon as sealed over; and as quite a quantity of the larvæ remained unsealed, the bees were allowed to start more queens from the same sheet of brood. The larvæ from which this second set of queens was reared, was of course several days old, and nearly ready to be sealed over.

The second set of queens, when first hatched, were much darker than those designed for queens from the egg. They were but little better colored than workers. These dark queens improved much in color, after becoming fertile.

I suppose the reason why they were darker, was because they were designed for workers, and were fed accordingly until their color in part was fixed.

It seems to me that such queens must partake somewhat of the nature of workers, and will not be so long lived and prolific as those designed for queens from the beginning.

The foregoing experiment I tried two or three times last summer, and shall continue it another season with an imported queen.

If others have experimented on the same point, and came to any definite conclusions, please give us the results.

J. L. HUBBARD.

WALPOLE, N. H.

☞So long as worker larvæ lie coiled on the bottom of the cell, they are fed exclusively on chyme or digested food; but when stretched at length in the cells, with head slightly elevated, they are fed with a mixture of pollen and honey, till ready to be capped—though it is likely an entire change of diet is not made suddenly.

Queen larvæ, on the contrary, as usually found in what are called pre-constructed cells, are fed exclusively from first to last—from the egg to the capping—with chyme or digested food.

The coloring matter of pollen shows itself plainly in the worker larvæ, soon after the change of diet takes place. But Prof. Leuckart could not, by means of the microscope, detect any coloring matter in the chyle-stomach of a queen larvæ taken from a pre-constructed cell. Whether a worker larva fed with honey and pollen for several days, then selected for the production of a queen, and re-fed with chyme or digested food during the remainder of its larval life, would exhibit the result of such feeding, we are unable to say. Prof. Leuckart's attention does not appear to have been directed to that point.

In as far as knowing it is concerned, any one of the kingdoms of nature is every man's kingdom, if he will but come and conquer it. The conquest is a conquest without labor, too, for we have only to wait with patience, and notice with attention, and nature does all the rest.—MUDIE.

THE AMERICAN BEE JOURNAL.

WASHINGTON, MAY, 1868.

☞ THE AMERICAN BEE JOURNAL is now published monthly, in the City of Washington, (D. C.,) at $2 per annum. All communications should be addressed to the Editor, at that place.

We have received from Mr. Edward Harrison, now residing in Frederick, Maryland, one of his newly patented Bee-Feeders, referred to in the April number of this JOURNAL. It is a simple and ingenious contrivance, by means of which colonies deficient in honey can be readily supplied at any time, without danger of attracting robbers.

Alsike Clover.

A report on Alsike clover, made to the Board of Agriculture of the State of Maine, gives the experience of Calvin Chamberlain, in its cultivation for several years. He says:—"It is hardy and more permanent than red clover; it branches much more, throwing out many stalks from one root, thus affording a good crop with thin seeding; it bears cropping well, thus proving its adaptibility to pasturage; and it continues in a condition to be cut longer than any forage plant that I know. I believe it to be the best honey-plant in the world. A field of Alsike clover is the best patronized bee-pasture I have ever seen, exceeding that of an orchard in full bloom. I am sure that in a neighborhood of Alsike clover fields, bee-keepers would not be searching for other plants for their use."

Alsike clover may be advantageously sown with spring barley or oats.—*Seed is advertised on second page of cover.*

The usual annual meetings of bee-keepers in Germany were deferred in 1866 and 1867, on account of the then disturbed state of the country. It is now, however, announced that the General Convention will assemble in the city of Darmstadt, in September next, though the days of meeting are not yet determined. These conventions are usually attended by the most eminent and experienced apiarians, and the debates are always interesting and instructive. The Paris Exposition was a failure, so far as bee-culture is concerned—the business being as yet one of subordinate interest in France. The case is otherwise in Germany, and visitors who may be attracted to the Darmstadt convention and exhibition will hardly come away disappointed.

There are two communications in this number of the BEE JOURNAL which we would specially commend to perusal and inward digestion of the anti-bee portion of the good people of Wenham, to whom we shall feel bound to pay some attention on all suitable occasions. As they are somewhat behind time, we must help them to catch up again.

One of those communications shows to how great a distance swarms will sometimes wend their way, when in quest of a new home; and from it we may fairly infer that bees do not restrict themselves to narrow limits, when impelled by instinct to explore the outside world in search of nectar. The other furnishes an instance where a single apricot tree in blossom was visited by bees from five different sources, and from distances varying from half a mile to at least a mile and a half. Now we presume that all the bees in that neighborhood are not "located flying about" in the town of Wenham, like a certain "crowing robin" we once heard of; and how hopeless an undertaking must it therefore be for the citizens to keep themselves free from such annoyances by resolutions of a town meeting! Depend on it, so long as they are slovenly or slatternly in the management of their kitchens, their pantries, their grocery shops, and the like, bees will find their way among them; and may then prove to be troublesome to cooks and compounders of comfits.

Mr. Köhler's process for controlling the fertilization of queen bees is not likely to become available to American bee-keepers this season. The process is to be kept secret in Europe for the present, and till a satisfactory sum is secured to the discoverer; and the price asked for communicating it for the benefit of American bee-keepers, is two thousand dollars in gold, payable in Europe. A fund is now being created in Germany, for Mr. Köhler's benefit, by voluntary subscriptions among bee-keepers. We have seen a list of contributors in February, embracing the names of forty-eight individuals and firms, amounting in the aggregate to about one hundred dollars. Nearly one-half of the contributors subscribe sums varying from fifty-five to seventy-five cents each; and the highest sum, in any case, is under twenty-five dollars. It does not seem from this as if the fund would

be large, or very soon made up if meant to be so.

We learn that several American inventors have their attention directed to this matter; and it may be that home-bred ingenuity will prove itself able to devise some convenient process equally efficient.

Extract from a letter, dated,

LIGHTSTREET, *Columbia Co., Pa.*,
April 15, 1868.

"If Mrs. Allen Tupper, Mr. Adam Grimm, Mr. H. A. King, or any other person largely engaged in the bee business, should come east the coming season, we would be pleased to have them call on us, or stop with us a day or two. By notifying us in time, we would bring them from the depot, and return them when desired, free of charge. H. W. CREASY & Co.

[For the American Bee Journal.]

Objections Answered.

A correspondent in the April number of the JOURNAL thinks that the honey-comb-emptier is objectionable, because people in his vicinity will not buy honey in a liquid state, except at a low price. Perhaps they never had it thus offered free from the coloring given in extracting it from old dark comb (and mixed with bee-bread) either by heat or pressure. We find no difficulty in disposing of all we have in a liquid form, either at home or abroad.

But even if it would not bring so high a price with him, let us ask if he can get as high a price, or any good price, for his honey in such comb; and also whether he cannot see saving enough in *using* this emptied comb, to be refilled in upper storage receptacles, to pay any difference in the selling price of the honey. Old comb is the best for this purpose.

The tendency of honey to candy is also urged as an objection. This has some force. We find that honey taken out of the comb last June and kept air-tight, is still as limpid as at first; but that honey taken out in December candied. Therefore we propose to empty the combs as fast as filled, and by putting the honey in air-tight vessels, do not apprehend any trouble. If it does candy, opening the jars and setting them in water which can be gradually heated, brings it back to the liquid state; and none thus treated has re-candied.

We shall be able to secure, by the use of the machine, our share of honey from the fruit blossoms, which every bee-keeper knows to be of a peculiarly delicate flavor; but which, without the machine, cannot be safely and profitably taken from the hive.

JAMES T. LANGSTROTH.

OXFORD, OHIO.

Hasty observers frequently fall into error, by attempting to found a fact upon an inference, instead of drawing an inference from a fact.

[For the American Bee Journal.]

Foulbrood in Iowa.

MR. EDITOR:—I see that Mrs. Tupper calls for an explanation of the fears expressed by Mr. Baldridge that there is foulbrood in some of the apiaries of Iowa. I may state that it is a fact that there is foulbrood in that State, at least in Clinton county; and it is spreading very rapidly. So I am told by residents in the neighborhood where it exists. It is spreading by the bees of strong colonies robbing weak stocks reduced by the disease.

If Mrs. Tupper had been at the Iowa State Fair she could have seen foulbrood, without going more than twenty rods from the enclosure of the fair grounds, as there is there an apiary badly affected with it.

I will endeavor to explain how it is supposed the disease was first introduced. Some boys found a bee tree and cut it, securing the bees, and putting them in a box hive. They then placed a thick cloth over the bottom and carried them home. On reaching home, however, most of the bees were dead. These were thrown out on the ground and soon began to decompose. Neighboring bees then gathered the honey that was in the honey-sacs of the dead and decomposing bees. Foulbrood was not discovered for some time after that, nor was its character known when observed, though suspected by some; but some of the comb with dead brood was sent to Mr. Quinby, who pronounced it foulbrood.

As to the fears that it was introduced with Italian bees, they are entirely groundless. It was discovered before any Italian bees were brought to that part of the country.

If Mrs. Tupper or any one else wishes for more information about the matter, I would refer them to Mr. David Hess, Lyons, Iowa, as he was the first to discover the disease, and lost some fifty swarms by it. He can probably state the number of apiaries affected by it, and how long ago it was discovered. I know only a few apiaries in which it exists.

Should any still doubt that there is foulbrood in Iowa, they can see for themselves if they attend the next Iowa State fair.

R. R. MURPHY.

FULTON, WHITESIDE CO., ILL.

[For the American Bee Journal.]

How to Feed Bees in Langstroth Hives.

In answer to Mr. Hunter's inquiry, I would say that I found, this winter, the following to be the best in practice:—Take a frame of empty comb, lay it on a pan and pour your liquid feed into the empty cells until full; now turn and fill the cells on the other side; then stand it upright over the pan, to drain. When drained enough, insert it in the hive.

JOHN M. PIERCE.

BUFFALO GROVE, IOWA.

[For the American Bee Journal.]

Requisites of a Good Hive.

Will any one improve a frame hive to such a degree as to have all the following advantages?

First.—That we can approach close to where the main body of the bees are breeding, with the surplus honey receptacle, as in Langstroth's shallow form of hive; and in which, at the same time, the bees may store honey enough in the main body of the hive, directly above them, to winter on. We are perhaps all aware that bees can get at their winter stores better, in cold weather, when placed directly above them, as in the case of their natural habitation, the hollow tree.

Secondly.—A hive of adequate size, but not containing more than eight (8) comb frames; as even a strong colony will not, in winter, occupy more than seven or eight combs at any one time.

Thirdly.—With all the above, the hive should be simple in construction, and not cost complete more than two dollars.

Should no one else propose a hive with all the above advantages, I will give a description in my next communication, of one that combines them.

S. B. Replogel.

Martinsburg, Pa.

[For the American Bee Journal.]

Mustard for Bee Pasturage.

Last season I sowed an acre of mustard. It came in bloom about six days before the white clover. I think by early sowing, on rich, dry land, it would blossom ten days before white clover. Bees worked well on it in the forepart of the day. I think the honey evaporated from it rapidly in clear warm weather. As I knew of no market for the seed, I plowed it under, and sowed buckwheat upon the ground. It was what is called white mustard.

I had growing on my farm a bunch of what is commonly called motherwort. It produced an abundance of flowers, and I noticed when the weather allowed bees to be out, that it was always covered with them. Will it furnish good honey? It is a very bitter herb, but I do not know its botanical name.

I wish to get a pure quality of Alsike clover seed. Any quantity up to sufficient to seed two acres. Can you inform me where it can be had?*

A. Stiles.

Genoa, Ill.

* Advertised by J. P. Bartholow in the Bee Journal for this month.

The Baron of Berlepsch says that the most remarkable instance of extraordinary fertility in a queen bee within his experience, was that of one in his apiary, which belonged to a very small swarm found on a willow tree in the summer of 1853. She survived her fifth summer in 1857, and at a moderate estimate must have laid at least one million three hundred thousand eggs in the course of her life.

[For the American Bee Journal.]

Answer to Questions by Querist.

In the Bee Journal, current volume, page 128, Querist desires to know "the best *size* and the best *form* for hives."

First, as regards size, my opinion is that a hive should contain not less than two thousand cubic inches inside of the frames, no matter what the climate may be, warm or cold.

My reasons are, that such a hive contains no more breeding space than will frequently be used by very prolific queens, especially Italian and hybrid queens. My hive contains about twenty-one hundred cubic inches, and my Italian and hybrid queens frequently fill every card of comb with brood, except a small portion allotted to honey. Therefore, I consider that a hive containing less than two thousand cubic inches would frequently limit the brooding capacity of the queen.

Again, it will be understood that in a small hive—one much less than the above-mentioned size—a queen during the breeding season fills all the combs with brood, so that little honey can be stored. Such stocks are almost sure to be short of honey for winter wants, if the fall honey harvest fails; as they cannot lay in a winter stock for want of room, until the breeding season begins to decline. But in a hive containing two thousand cubic inches, there will at all times be enough for winter wants, except where queens are more than usually prolific. Hence, stocks in such hives are not so likely to be affected by a failure of the fall honey harvest. I agree, also that a frame hive had better be a little longer than is actually needed for breeding, and the storing of honey for winter use. For if a hive is found to contain too much honey in the fall, it is easily removed. Or if, when spring comes, some stocks have more honey than is requisite, others are sure to require supplies. Then by exchanging cards of comb, these stocks that are short of honey can be at once supplied. Such are my reasons for advocating a hive containing two thousand cubic inches, as the proper *size*. Are they satisfactory? The best *form* of hive some other time.

J. H. Thomas.

Brooklin, Ontario.

The number of days in a season in which bees gather more than is consumed in breeding, or by young bees which gather nothing for about the first ten days of their existence, is more limited than most persons suppose. Some seasons it is less than a fortnight. Feeding swarms weak in stores to enable them to pass the winter in safety, should be done as rapidly as possible after the queen has ceased laying in October; otherwise they will consume much in rearing young, when their population may be already sufficiently strong. By feeding regularly and sparingly, I have kept young queens laying, more or less freely, until the middle of November.—*E. Parmly, New York.*

The *Southern Ruralist*, published at Tangipahoa, Louisiana, and we believe the only agricultural paper published in the south-western section of the country, commences a new volume, much improved and enlarged. It is well edited, and deserves to be liberally supported in its efforts to make the southern people "self-reliant, self-respecting, and self-supporting," by "an energetic, judicious, and prompt development of their agricultural, manufacturing, and mineral resources."

Mr. Adam Grimm, of Jefferson, Wisconsin, sent us by express, an Italian queen bee and a few workers, in a box two and a half inches long, two inches broad, and one and a half inches high, made of one-quarter-inch pine, with four ventilating slits. The queen arrived safe, and as it is stated that, though she lays freely, her eggs do not hatch, we shall endeavor to ascertain the cause of that peculiarity, if we succeed in preserving her.

[For the American Bee Journal.]

Upward Ventilation.

In the March number of the BEE JOURNAL, page 169, vol. 3, in the article "Water for Bees," Mr. F. H. Miner condemns upward ventilation. If he is right, will he explain the following:—

Last fall I left a swarm out of doors to test that very point. From Christmas to the 20th of January, we had bitter and steady cold weather. On the 20th I examined the swarm. They were all right and lively. I then shut them up, and closed the nine holes in the honey-board, thus stopping all upward ventilation. Four days after I examined them again, and found my bees dead, with frost all over the hive, comb, and bees. All the rest of my bees, having upward ventilation in just as cold a place, but not exposed to the winds, came out safe, with very few dead in the hives this spring. As my neighbors have lost half of the bees they had last fall, from the same cause (or attributed to it), will Mr. Miner inform us what killed our bees?

JOHN M. PRICE.

BUFFALO GROVE, IOWA.

In the orchard-house of Stephen Morris, Esq., near Philadelphia, where peaches are grown by the bushel in fifteen inch pots and eighteen inch tubs, the gardener attributes much of his success to the agency of bees in fertilizing the blossoms. He places a hive in the house as soon as the flowers begin to open, and the bees are kept there till the flower leaves of the blossoms drop.

[For the American Bee Journal.]

Some of our Personal Observations.

FIRST.—*Concerning more than one queen in a hive.* We notice that our friend J. H. Thomas, of Brooklin, Ontario, seems to think that two queens will not be permitted to live in *one* hive, *strictly speaking;* but that the space, whether in a hollow log or box, must be so constructed by nature or art, as to be virtually two hives, for the continued existence of two queens in close proximity.

As I have some experience in opposition to this, I will relate it. About the year 1853, I purchased of a neighbor a colony of bees in a very large box hive, say about eighteen inches square and twenty-two inches long. This colony he said was fifteen years old, and had never failed to swarm annually two and and sometimes three times, during that term. I kept it two years, but got no swarm, but such a mass of bees lay out upon it all summer the last year, that I made up an artificial swarm by removing the bees on its outside. At the close of honey harvest in 1855, I took up the bees, which were now few in number, and found in the hive three living queens, that appeared to be superannuated or slightly crippled, and one lively smart queen (to appearance). How long these queens had been there, I am not able to state; but that I found them there, is a fact witnessed by several persons.

SECOND.—*Concerning Honey Boxes.* I make mine to hold from eighteen to twenty pounds each, and without any bottom—taking off the the honey-board when I put the boxes on. Each box contains nine small frames, four of which just fill one of the large frames in the hive. I put a small piece of worker comb on the underside of the top bar of each frame, before putting them into the boxes. In this way I have had a swarm make forty pounds of box honey in about eight days.

The supers thus get the advantage, first, of all the warmth of the hive, so that the bees will work in boxes both earlier and later in the season, and are not checked by sudden changes of weather. They also, second, have a perfectly free pass from the hive to the supers; as it is virtually a simple upward extension of the hive.

Third, the honey being built in little frames, four of which just fill one frame of the hive, gives a chance to feed with box honey any swarms that may need food. These little frames are also just right to put into little nuclei hives to raise queens with, and thus save the cutting up of larger combs; for by simply filling two or three big or hive frames, with the little frames and inserting them in the body of the hive, we can soon have them filled with brood. They can then be removed to the nuclei hives, putting one frame of brood to each nucleus, with one of honey and one empty or containing empty comb, and we have a nucleus sufficient for a pint or a quart of bees. And, fourth, by filling the two outside on each side of the hive with the little frames, and letting the bees fill them with honey and cap them, we can then remove them to the boxes for market; and thus very much in-

crease the amount of surplus honey, as it is well known that bees will store honey much faster in the body of the hive than they will in boxes.

GILES B. AVERY.

ALBANY CO., N. Y.

[For the American Bee Journal.]

Artificial Comb Guides and Frames.

EDITOR BEE JOURNAL:—As your valuable paper is composed in part at least of contributions from bee-keepers, I have concluded to send you an item that I think will be of considerable value to my apiarian friends who use the movable comb hive, especially to the farmer who wishes to make his own hives. As the triangular comb guide is somewhat difficult to make, I have hit on a plan far more simple, and, as I claim, much better. It is simply a square strip tacked on the under side of the top bar of the frames—say a strip $\frac{1}{4}$ by $\frac{3}{8}$ of an inch, tacked on so that the width extends downward. In experimenting with moveable frames, and using the triangular comb guide as described by Langstroth and others, I found that frequently the bees would leave the sharp edge or square corner of the frame, and then cross to the opposite side of the frame, which of course makes the comb much waving or crooked. But since substituting the strip I nave not been troubled in this way; for if in building the bees do pass from one side of the strip to the other, it is only a quarter of an inch instead of seven-eighths of an inch deviation.

I will now describe my manner of making and the material used. I simply use common plastering laths, which are commonly about an inch and a half wide. I rip them in two, making one strip wide enough for the top of the frame, which I make seven-eighths inch wide. The narrow strip that falls off makes the guides and also strips for the bottom of the frame. I take off the rough of the lath for the top of the frame; the rest need no dressing except to size the strips for the guides or bottom. The lath, when ripped in this way, also makes the ends of the frame. I also prefer for my use a center piece nailed in the frame, the same as the ends. This makes the frame more solid, and secures the comb from being broken while the frames are handled.

Feeling confident that this only needs a trial to be appreciated, I drop it for the readers of the JOURNAL. I will further say that if, in connection with the frames you will use partition boards, to contract or enlarge the size of your hive, to suit the strength of your colony, it will be an additional help in securing straight comb, a good stock, and surplus honey.

SAMUEL MAY.

EDDYVILLE, OHIO.

The *fanning* of bees at the entrance of the hive is chiefly designed for ventilation. At times however, and in other circumstances, it is employed to express either grief or joy—grief at the loss of their queen, or joy on returning home after long continued and constrained absence.

[For the American Bee Journal.]

Are Valuable Patents Selfish Monopolies?

MR. EDITOR:—May I be permitted through the columns of your JOURNAL, to say a few friendly words to those opposed to all Patents, as selfish monopolies?

Such opposition was once so common that honest patentees often found it impossible to protect their rights. The late Professor Olmsted, of Yale College, informed me that Eli Whitney, the inventor of the cotton-gin, found it almost impossible, in a trial before the United States court in one of the Southern States, to find witnesses willing to swear that his gins were in public use, while at the very time of the trial, the sound of gins illegally used, was plainly heard through the open doors and windows of the Court House! If after years of fruitless litigation he had not practically abandoned his invention to those who were determined to deprive him of any remuneration for its use, and applied his inventive talent to the manufacture of guns for the Government, he might have died an impoverished man.

Even twenty years ago, to be known as the owner of a patent right, was, by very many, regarded as detracting from a man's good standing in the community. Among intelligent men, this prejudice has nearly if not quite, passed away, and they will cheerfully admit that to no class of persons, is the productive industry of the country more indebted than to honest and capable patentees. It is no exaggeration to say that where one dollar has been paid for the right to use their valuable improvements, at least ten have been realized to the country at large. Few men could afford to devote the time and money needed to make valuable inventions, if they were to become public property as soon as divulged.

Our Government began very early to foster the inventive talent of its citizens, and nearly every civilized nation has, by its patent laws, recognized the importance of doing the same thing.

It is well known that many bee-keepers are illegally using the patented features of the Langstroth hive. Possibly some of your readers are doing this, and perhaps with less scruple because they suppose that I have grown rich by this invention. Such persons will probably be surprised to learn that for the last fourteen years, I have lost at least half of my time, from an affection of the head which unfits me entirely for either mental or bodily labor, and that owing to the numerous infringments upon my rights, after years devoted to studying the habits of bees and improving hives for their management, I am actually poorer than when I begun the work.

L. L. LANGSTROTH.

OXFORD, BUTLER CO., OHIO,
March 30th, 1868.

When bees are in want of honey, or when they have lost their queen, or when besieged on all sides by the moth worms, they will occasionally desert their hives.

[For the American Bee Journal.]

Shallow Hives.

After using the "broad shallow things" for hives (as Mr. Gallup calls them) for ten years, I must say that I cannot endorse all which Mr. Gallup says of them. We here in Essex county (Mass.), have but little trouble in making our bees build straight combs, and I never have seen but one, in these hives, destroyed by the moths, and this was done while the owner was confined to the house sick. There are hundreds of these "shallow things" used by the bee-keepers of New England; and most of those using them have had good success with them. I never yet found a bee-keeper using them who did not speak well of them. Of course, Mr. Gallup has a right to say what he choses; but we here in this part of the world, do not believe he has fairly tested the shallow hive. I want nothing better for my bees, and do not believe a better hive can be found. Mr. Gould, of Wenham, has used these hives for ten years, and he finds no trouble in making *his* bees build straight comb; neither does he have any trouble in *wintering* bees in them.

Why don't Mr. Gallup tell new beginners what the BEST hive is?

I have sold farmers the shallow hive, and their bees have always done well in them, notwithstanding they do not go near their bees more than once or twice in a year. Some farmers whom I have sold hives to, have had bees in them for seven years, without losing a single stock; and I *know* that they did not trouble them more than twice in the course of the season, *and then* only to remove the surplus honey.

Their bees seemed to do well with no care at all, and pay them a handsome profit. Mr. Gould has about fifty stocks in the shallow hives, which seem to be wintering well. Most of them are in double hives, which I described in the September number of the JOURNAL; and each hive had the winter passages made through the combs, and has a box of dry corncobs over the frames.

I have examined my hives once a week during the winter, and found the bees clustered snug to the cobs every time. I find that the cobs make an excellent winter passage for the bees, to pass to any part of the hive. I sometimes found the bees clustered near the entrance; and then again I would find the same stock near the rear. Will others who have used the "shallow things," give the readers of the JOURNAL their experience with them?

WENHAM, MASS. H. ALLEY.

[For the American Bee Journal.]

Fertile Workers.

MR. EDITOR:—In October last I deprived three colonies of bees of their queens, for the purpose of introducing Italians. Five days later I removed all the queen cells that had been started, and not having received the Italian queens as soon as I expected, left the colonies about three weeks longer. At the expiration of that time I discovered that two of the colonies had *fertile or drone producing workers.*

Will not bees ordinarily, if deprived of the the means of procuring a fully developed queen, do all they can in that direction, and by feeding "royal jelly" to partly developed workers, so change their character as to make them lay drone eggs? This seems natural, and my observation in the instance narrated above, appears to afford strong corroborative evidence. If it is really true, then, in our efforts to Italianize a colony, unless a queen can be supplied, immediately, the young queen cells should not be removed until about the tenth day after the removal of the reigning queen.

Will you or some of you contributors ventilate this matter a little? POLO.

☞Fertile workers evidently originate in various ways, and various hypotheses have been proposed to account for their appearance. The explanation above accords substantially with the views of Huber, Dzierzon, and Von Siebold. Von Berlepsch, however, thinks they are sometimes produced in colonies in which no queens were reared or attempted to be reared, for several years; and in which consequently no worker bred contemporaneously with a queen could have been found. He cites a case which came under his own observation, and which he thinks confirms that view, but it does not seem to us to be conclusive.

[For the American Bee Journal.]

Polanisia Purpurea, and Cleome Integrifolia.

These plants, described on pages 50 and 71, Vol. 3. AMERICAN BEE JOURNAL, seem to be very much alike. Both were brought from the Rocky Mountains, and are similar in growth and appearance, according to the descriptions given. I have received a package of seed of *Cleome* Integrifolia and can see no difference between it and the seed of Polanisia Purpurea.

An old edition of Wood's Botany describes Cleome and Polanisia as two species under the same order, which shows that they are probably very near alike.

As I have sown the seed received I can probably detect the difference, if any, next summer.

I have fed some of the seed of the Polanisia purpurea to sheep, and find they will eat it; though they do not like it as well as corn and oats. The seed is bitter, and I cannot tell what the effect would be to feed a large quantity of it. The leaves and stalks are of no account for forage, as one paper has asserted.

Will not some practical botanist inform us in regard to the difference between these plants? Also the probable value of the seed?

I have remaining a quantity of seed of the Polanisia purpurea, and will send a package to any one who wishes to try it, if a small sum is enclosed to pay expenses of postage and putting up. J. L. HUBBARD.

WALPOLE, N. H.